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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,915	06/21/2006	Roland Huttinger	P40110US	5072

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EXAMINER	
PERRY, ANTHONY T	
ART UNIT	PAPER NUMBER
2879	

NOTIFICATION DATE	DELIVERY MODE
12/15/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/583,915	HUTTINGER ET AL.	
	Examiner	Art Unit	
	ANTHONY T. PERRY	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Newly submitted claim 20 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claim 20 is directed to the species shown in figure 11, wherein the electrode comprises a shaft part defining a first longitudinal direction and a head part defining a second longitudinal direction transverse to the shaft part, while the originally present claims are directed to the species having an electrode defining a single longitudinal direction.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 20 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitation "the diameter B" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the diameter D" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the head part" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11, 13, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eggers (US 6,437,509).

Regarding claims 1 and 3, Eggers discloses an electrode for metal vapor-containing discharge lamps made from a high-melting, electrically conductive material (col. 1, line 43) comprising a pin which defines a longitudinal axis and wherein the pin comprises a shaft (13) and a head part (17), wherein the head part (17) has a diameter D2 which extends beyond that of the shaft (13), wherein at least one hole (20,20') is arranged in the head part of the pin at an angle of 60 to 90 degrees with respect to the longitudinal axis (for example, see Fig. 9).

Eggers teaches the pin being formed of separate head and pin parts, and does not specifically teach the pin being continuous (integral). However, it has been held that forming in one piece an article that has formerly been formed in two pieces and put together involves only routine skill in the art. It is noted that the applicant's specific limitation of the electrode being a continuous pin (integral head and shaft parts), does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found

obvious to select an electrode having an integral head and shaft part or one that is made of two separate parts connected together.

Regarding claim 2, Eggers does not specifically disclose an embodiment wherein the shaft and the head part have a uniform, predetermined diameter. However, it is noted that such configurations of lamp discharge electrodes are known in the art. Also, it is noted that the applicant's specific limitation of the shaft and the head part does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select any configuration (same diameters or a larger diameter for the head of the electrode), based on the constraints of the lamp being manufactured and the desired discharge properties, as long as the electrode head has transverse holes provided therein.

Regarding claim 4, Eggers teaches the electrode as claimed in claim 1, wherein the hole (20) is continuous or is in the form of a blind hole (for example, see Fig. 9).

Regarding claim 5, Eggers teaches the electrode as claimed in claim 1, wherein the head part contains at most three holes (for example, see Fig. 9).

Regarding claim 6, Eggers teaches the electrode as claimed in claim 1, wherein the diameter of the hole varies, the hole (20) having a maximum diameter B (for example, see Fig. 10).

Regarding claim 7, Eggers teaches the electrode as claimed in claim 6, wherein the maximum diameter is in each case approximately the same size in the case of a plurality of holes (20, 20') (see Fig. 10).

Regarding claim 8, Eggers teaches the electrode as claimed in claim 1, wherein the hole is linear (for example, see Fig. 9).

Regarding claim 9, Eggers teaches the electrode as claimed in claim 1, wherein the plurality of holes (20,20') lie in one plane (see Fig. 9).

Regarding claim 10, Eggers teaches the electrode as claimed in claim 9, wherein the plurality of holes are connected to one another (see Fig. 9).

Regarding claim 11, Eggers teaches the electrode as claimed in claim 4, wherein the hole is continuous. It is noted that claim 11 does not require that a blind hole be formed, since it is dependent on claim 4 which states that "the hole is continuous or is in the form of a blind hole", and therefor the recitation, "that each blind hole has a depth of at least 50% of the diameter of the head part" is not necessary if the hole is continuous.

Regarding claim 13, Eggers teaches the electrode as claimed in claim 1, wherein the distance between the center of the hole (20) and the tip is denoted by A, the ratio A to the diameter of head part is within a range between 1 and 6 (for example, see Fig. 9).

Regarding claim 14, Eggers teaches the electrode as claimed in claim 1, but does not specifically recite that the ratio between the diameter of the hole and the diameter of the head part is between 0.05 and 0.3. However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an appropriate ratio for the diameter of the hole to the diameter of the head portion of the electrode, since optimization of workable ranges is considered within the skill of the art. It would be obvious that the diameter of the hole should be

considerably less than the diameter of the head part of the electrode so as not break the head portion of the electrode when providing the hole.

Regarding claim 15, Eggers teaches a lamp having at least one electrode as claimed in claim 1, wherein the discharge vessel is made of glass or ceramic. Eggers does not specifically recite the fill material of the lamp. However, it is well known in the art to use mercury and/or sodium as the fill material in discharge lamps. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have used mercury and/or sodium as the gas fill of the discharge lamp taught by Eggers, since the selection of known materials for a known purpose is within the skill of the art.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eggers (US 6,437,509) in view of Neiger et al. (US 4,937,496).

Regarding claim 12, Eggers teaches the electrode as claimed in claim 1, but does not specifically recite that the tip of the head part is rounded off.

However, Neiger et al. teach an electrode of a discharge lamp having the tip of the head part is rounded off (for example, see col. 2, line 65 – col. 3, line 1). Neiger teaches that by rounding off the tip portion of the head of the electrode, it prevents disintegration and melting of the electrode tip. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to round off the tip of the electrode taught by Eggers in order to prevent disintegration and melting of the tip of the electrode, and thereby increasing the lifetime of the lamp.

Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eggers (US 6,437,509) in view of Makoto (JP 11-123577).

Regarding claim 16, Eggers teaches a method for producing an electrode, in which the electrode has a pin-shaped head part having a longitudinal axis, wherein a hole (20) is produced essentially transversely with respect to the longitudinal axis using a laser (for example, see col. 1, lines 44-61 and Fig. 9). Eggers does not specifically recite that the hole is made by short laser pulses of a maximum of 10 microseconds in duration.

However, it has been held to be within the general skill of a worker in the art to select a known method on the basis of its suitability for the intended use as a matter of obvious design choice. Furthermore, Makoto teaches a method of forming holes into an article, that uses short laser pulses of a maximum of 10 microseconds in duration (for example, see the abstract). It would have been obvious to one having ordinary skills in the art at the time the invention was made to have looked to the Makoto reference for guidance in operating the laser to form the holes, since Eggers remains silent about the specifics on how the laser is used to form the holes.

Regarding claim 17, Makoto teaches the the laser beam is focused (for example, see abstract and Fig. 1).

Same reasoning for combination, above, applies.

Regarding claim 18, Makoto teaches that the rate of repetition of the pulses is at least 1 kHz (for example, see the abstract).

Same reasoning for combination, above, applies.

Regarding claim 19, Eggers and Makoto do not specifically recite that that the energy density of the focused laser beam is above the energy density required for sublimation of the

material of the electrode. However, it would have been obvious to one of ordinary skillin the art at the time the invention was made to have ensured that the energy density of the focused laser beam is above the energy density required for sublimation of the material of the electrode. Otherwise, it would not be possible to form the holes with such accuracy.

Response to Arguments

Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is **(571) 272-2459**. The

examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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